

IN THE CLAIMS:

Please cancel Claims 7-10, 12-15, 17-20, 22-25 and 27-30 without prejudice to or waiver of their subject matter.

Please amend Claims 1 and 16, as follows. All claims in the original application are being reproduced below in accordance with current U.S. Patent and Trademark Office requirements.

1. (Currently Amended) An electromagnetic actuator comprising:
a core with a coil wound around said core;
two stators magnetically coupled to each end of said core;
a movable element opposed ~~which is displaceable relative~~ to said stators with
two air gaps; and
supporting means for supporting said movable element to be displaceable
relative to said two stators,
wherein ~~said supporting means~~, said stators and said movable element are
made of the same material, and
wherein said two stators and said movable element ~~each~~ have a projection and
a depression in said two air gaps in such a way that the projection and depression of said stators
engage with the projection and depression of said movable element, side surfaces of the
projection and depression being parallel to the displacement direction of the movable element
and partially overlapping even if there is no electromagnetic force.

2. (Previously Presented) The electromagnetic actuator according to claim 1, wherein said supporting means said stators are fixed onto a substrate.

Claim 3 (Cancelled).

4. (Previously Presented) The electromagnetic actuator according to claim 1, wherein said supporting means is a parallel hinge spring made up of a plurality of flat springs combined in parallel, and the projections and depressions of said stators and the projections and depressions of said movable element are formed like comb-teeth parallel to the direction of movement of said parallel hinge spring.

5. (Previously Presented) The electromagnetic actuator according to claim 1, wherein said supporting means is a concentric hinge spring combining a plurality of flat springs in a concentric radial form, and the projections and depressions of said stators and the projections and depressions of said movable element are formed in a concentric form around the center of rotation of said concentric hinge spring.

6. (Original) An optical scanner, comprising:
a movable mirror; and
the electromagnetic actuator according to claim 1 mechanically connected with said movable mirror.

Claims 7-10 (Cancelled).

11. (Original) An optical scanner, comprising:
a movable mirror; and
the electromagnetic actuator according to claim 2 mechanically connected with
said movable mirror.

Claims 12-15 (Cancelled).

16. (Currently Amended) An optical scanner, comprising:
a movable mirror; and
the electromagnetic actuator according to claim 1 ~~3~~ mechanically connected
with said movable mirror.

Claims 17-20 (Cancelled).

21. (Original) An optical scanner, comprising:
a movable mirror; and
the electromagnetic actuator according to claim 4 mechanically connected with
said movable mirror.

Claims 22-25 (Cancelled).

26. (Original) An optical scanner, comprising:
a movable mirror; and
the electromagnetic actuator according to claim 5 mechanically connected with
said movable mirror.

Claims 27-30 (Cancelled).